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LISTS OF SPECIES

A Contribution to the Flora of Rajouri and Poonch Districts in the Pir Panjal Himalaya (Jammu & Kashmir), India

Gh. Hassan Dar [1*], Akhtar H. Malik [2] and Anzar A. Khuroo [2]

1 Mahatma Gandhi Chair on Ecology & Environment, Baba Ghulam Shah Badshah University, Rajouri-185 234, Jammu & Kashmir, India.
2 Centre for Biodiversity and Taxonomy, University of Kashmir, Hazratbal, Srinagar -190 006, Jammu & Kashmir, India.
* Corresponding author. E-mail: *profdar99@gmail.com*

ABSTRACT: The current paper provides a taxonomic inventory of the vascular plant species collected by the authors during the last two decades from the Rajouri and Poonch districts, located along the Pir Panjal range in the Indian Himalayan State of Jammu and Kashmir. The inventory records a total of 352 species, which belong to 270 genera in 83 families. Of the total taxa, the angiosperms are represented by 331 species in 253 genera and 77 families; gymnosperms by 12 species in 9 genera and 3 families; and pteridophytes by 9 species in 7 genera and 3 families. Asteraceae is the largest family, contributing 42 species; while Artemisia is the largest genus, with 5 species. The inventory is expected to provide baseline scientific data for further studies on plant diversity in these two border districts, and can be used to facilitate the long-term conservation and sustainable use of plant resources in this Himalayan region.

INTRODUCTION

Of the various environmental problems faced in modern times, the loss of biodiversity is the most serious one. The unprecedented rate of species extinction, mainly driven by unbridled human activities, is fraught with grave economic and ecological consequences. The global diversity of biota on the planet Earth is, however, so vast that only 1.7 % of it is scientifically known (Dar and Farooq 1997); this poses problems in assessing the taxa that are lost. Given such a perilous state of affairs, taxonomic inventory of biodiversity has gained much urgency worldwide. The situation is particularly pronounced in the developing world, which coincidentally harbors the richest but the most threatened biodiversity (Khuroo *et al*. 2008).

In the Himalaya, recognized as a global biodiversity hotspot (Mittermeier *et al*. 2005), crucial taxonomic information about many of its regions is still not available. The Indian State of Jammu and Kashmir (J & K) in the Western Himalaya is one such region which has been recognized as floristically under-explored by the Botanical Survey of India (Dar *et al.* 2012). Biogeographically, J & K State comprises three distinct provinces: the subtropical Jammu, the predominantly temperate Kashmir, and the cold-arid Ladakh. Owing to great variety of habitats all along these provinces, the State is very rich in floristic diversity. Its flora has attracted the attention of many foreign and local botanists since the last about two centuries. Many of its plants are cited in the illustrious works of Hooker (1872-97) and Stewart (1972).

In J & K State, Jammu province possesses the greatest floristic richness. Several taxonomic studies dealing with floristic diversity of this province have been carried out over the last three decades. Sharma and Kachroo (1981-82) published the Flora of Jammu and adjacent areas, providing taxonomic details in Vol. 1 and illustrations in Vol. 2. Kapur and Sarin (1990) dealt with the flora of Trikuta hills, presenting a good floristic account of the plants harboring these hills and the surroundings of Shri Vaishno Devi Shrine. Swami and Gupta (1998) published the Flora of Udhampur district, which is a useful treatise on the higher plants of this region. Bhellum and Magotra (2012) catalogued the flowering plants of Doda, Kishtwar and Ramban districts, dealing with floristic richness of these three adjacent districts in the Chenab Valley.

The Rajouri and Poonch, however, are floristically the least surveyed districts in the Jammu province, with scanty and scattered information available on their flora [Singh and Kirn (1981); Kirn (1992); Singh (1992); Vir Jee *et al*. (1984); Dar *et al*. (2009); Malik *et al*. (2010)]. All these publications are preliminary short communications, none having attempted an inventory of plants occurring in these two districts. To bridge this knowledge gap, the results of the plant surveys and collections from these two districts for over two decades are consolidated in the present paper, with a view to facilitate complete floristic inventorization of the whole region.

MATERIALS AND METHODS

Study Area

The Rajouri and Poonch districts are located on the southerly foothills of the Pir Panjal Himalaya in the Indian State of Jammu and Kashmir. The two districts represent a transition zone between the subtropical Jammu and the temperate Kashmir provinces. Whereas the Rajouri district is located at 32°57′ to 33°34’ N latitudes and 74°00′ to 74°48′ E longitudes, the Poonch district is located between 33°28’ to 34°00′ N latitudes and 73°56′ to 74°32′ E longitudes (Figure 1). The Rajouri district comprises seven tehsils, which cover a total area of 2,630 km^2, out of which forests constitute 1,267 km^2 (48.17 %). The Poonch district on the other hand comprises four tehsils, which cover a total area of 1,674 km^2 out of

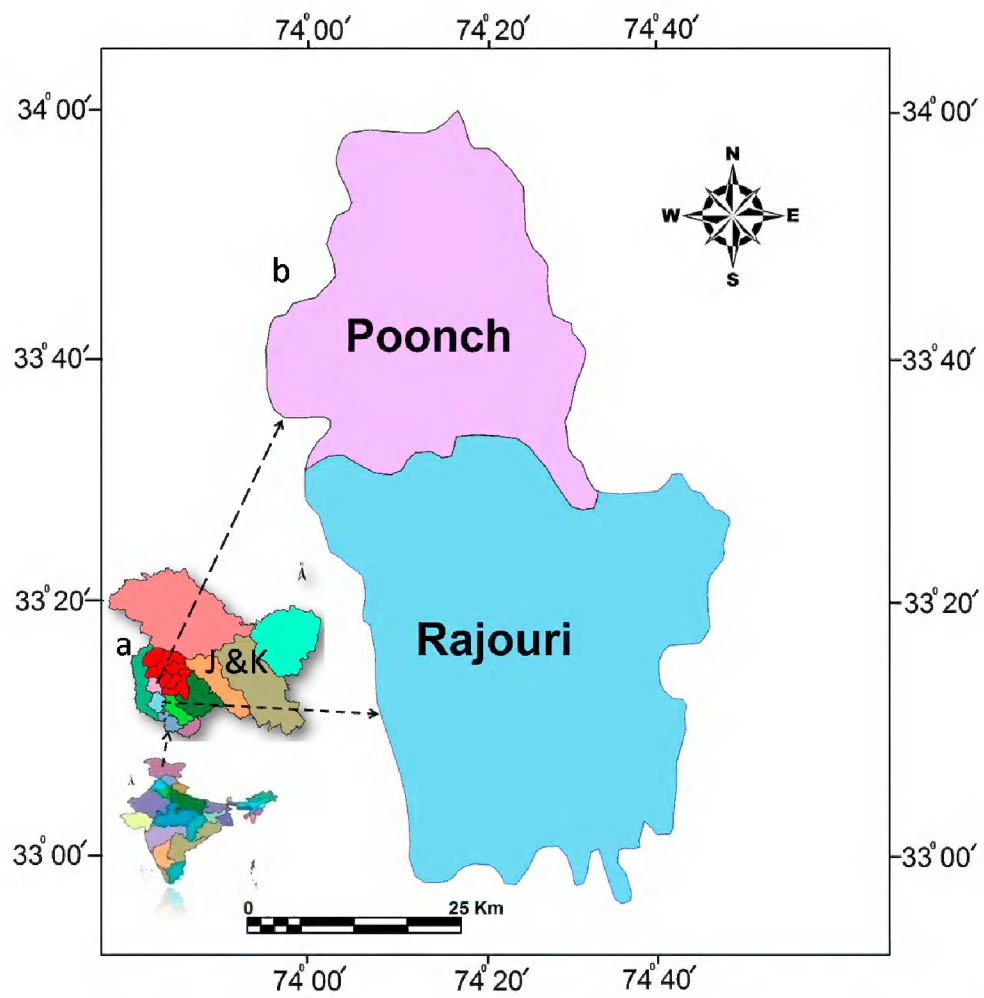

Figure 1. Location map of the study area: a) Jammu and Kashmir (J & K) State, India; b) Rajouri and Poonch districts.

which forests are spread over 951 km^2 (56.81 %). Both these districts are strongly undulated to mountainous, with most of the population (about 96 %) living in isolated villages (Anonymous, 2012). The topography is varied with peculiar physical features; most of the cultivated land exisiting in upland areas, with maize being the staple food of people in the area. The climate in both these districts is broadly subtropical, although the foothill areas along the Pir Panjal range show dry temperate conditions, while subalpine and alpine conditions prevail higher up in the mountains.

The vegetation usually comprises Chir-pine (*Pinus roxburghii*) forests, broad-leaved deciduous forests, broad-leaved evergreen forests, scrub forests, interspersed with frequent grassland patches and agricultural croplands. The Pir Panjal mountain range, generally with steep slopes and gradual ascendance in altitude, exhibits a climatic gradient from temperate through subalpine to alpine in the uppermost reaches. Commensurate with these wide climatic conditions, the flora of the region depicts rich diversity.

Taxonomic identification

The present paper is the result of detailed field studies made during the floristic surveys conducted in the Rajouri-Poonch districts from 1987-1988, in 1993, and again from 2008-2010. During these surveys, plants were collected from diverse habitats in different areas of the twin districts. During collection, detailed field observations were recorded, including notes on ethnobotanical uses of various plants by the local people. The collected plant specimens were properly processed following standard herbarium techniques, and identified at the Centre for Biodiversity and Taxonomy, University of Kashmir, using relevant Floras and other available taxonomic literature (Hooker, 1872-97; Stewart, 1972; Sharma and Kachroo, 1981-82) and online resources, such as Flora of Pakistan and Flora of China. Identifications were in some cases verified against previously identified herbarium specimens at the Kashmir University Herbarium (KASH). The exsiccatae of all the plant species included in this paper are deposited in KASH.

Results

The present paper for the first time provides an inventory of 352 species of vascular plants collected by the authors from various areas in the Rajouri and Poonch districts of Jammu provice in the J & K State.

Taxonomic enumeration

The sequence of plant groups in this enumeration starts with pteridophytes, followed by gymnosperms and then angiosperms. Within each of these plant groups, the families, genera and species are arranged alphabetically in tabular form. For each of the species, its current valid name and author citation is provided in the first column; while in the second column details of exsiccatae are given, inculding district and local area of collection, altitude of the area, date of collection, name of the collector(s) and collection number (s) [Table 1]. For some species, brief and helpful field/lab taxonomic notes are also appended.

Discussion

Rajouri and Poonch, two border districts located on southerly foothills of the Pir Panjal Himalaya are botanically the least surveyed areas in the Jammu province of Jammu & Kashmir State, with very little and preliminary information available on their flora. Singh and Kirn (1981) provided a list of some alpine plants of Poonch; Kirn (1992) presented a brief account of some medicinal plants of Pir Panjal Range; Singh (1992) gave an introductory account of some wild flowering plants of Rajouri; Vir Jee *et al.* (1984) reported their concise taxo-ethnobotanical observations made in some rural areas of Rajouri; Dar *et al.* (2009) published an abstract of the inventory of higher plants of Rajouri; while Malik *et al.* (2010) listed some woody plants of Rajouri and Poonch in their paper on woody flora of Jammu & Kashmir. To augment the floristic knowledge of these areas, the present studies were undertaken.

In the present paper, the results of plant surveys and collections made from Rajouri-Poonch districts during the last two to three decades are consolidated, with a view to facilitate documentation of their overall floristic diversity. The inventory provided here records a total of 352 species of vascular plants, which belong to 270 genera in 83 families. Ethnobotanical notes are also appended with some taxa to document their traditional uses.

Table 1. Enumeration of plants collected from Rajouri and Poonch districts in Jammu & Kashmir State of India.

PLANT TAXA	DETAILS OF EXSICCATAE
Pteridophytes	
Aspleniaceae	
Asplenium adiantum-nigrum L.	Poonch, Bufliaz, 2000 m, 8.1.2010, *Akhtar* 1074.
Equisetaceae	
Equisetum arvense L.	Poonch, Bufliaz,1900 m, 8.1.2010, *Akhtar* 990.
Pteridaceae	
Adiantum capillus-veneris L.	Poonch, Bufliaz,1900 m, 8.1.2010, *Akhtar* 1274.
Adiantum incisum Forssk.	Poonch, Behramgali, 2300 m, 8.1.2010, *Akhtar* 913.
Cyrtomium caryotideum Presl.	Poonch, 950 m, 8.8.1986, *Kachroo* 9796.
Dryopteris barbigera O. Kze.	Poonch, Behramgali, 2300 m, 8.1.2010, *Akhtar* 912.
Polystichum lonchitis (L.) Roth.	Poonch, Surankote, 1500 m, 8.1.2010, *Akhtar* 1075.
Pteris cretica L.	Poonch, Behramgali, 2150 m, 8.1.2010, *Akhtar* 1201.
Pteris vittata L.	Poonch, Behramgali, 2150 m, 8. 1.2010, *Akhtar* 901.
Gymnosperms	
Cupressaceae	
Cryptomeria japonica D. Don	Poonch, Govt. Degree College, 950 m, 18.1.1993, *Mukhtar* s. n.; Rajouri, Agriculture Dept. Office, 910 m, 9.1.1993, *G. H. Dar* 9954.
Cupressus funebris Endl.	Poonch, District Forest Office, 950 m, 4.1.1993, *G. H. Dar* 9997.
Cupressus sempervirens L.	Rajouri, District Forest Office, 910 m, 4.1.1993, *Mukhtar* s. n.
Cupressus torulosa D. Don	Rajouri, District Forest Office, 910 m, 4.1.1993, *G. H. Dar* 9994.
Juniperus chinensis Linn.	Rajouri, District Forest Office, 910 m, 4.1.1993, *G. H. Dar* 9997.
Cycadaceae	
Cycas revoluta Thunb.	Poonch, Govt. Degree College, 950 m, 18.1.1993, *Mukhtar* s. n.
Pinaceae	
Abies pindrow Royle	Poonch, Lohren, 2220 m, 5.1.2010, *Akhtar* 1161.
Cedrus deodara (Roxb.) G. Don	Poonch, Bufliaz forest, 2000 m, 5.1.2010, *Akhtar* 1267.
Picea smithiana (Wall.) Boiss.	Poonch, Bufliaz forest, 2100 m, 5.1.2010, *Akhtar* 1667.
Pinus roxburghii Sargent	Poonch, Mendhar, 950 m, 10.1.2010, *Akhtar* 1208.
Pinus wallichiana A.B. Jackson	Poonch, Lohren, 2250 m, 8.1.2010, *Akhtar* 1237.
Taxaceae	
Taxus wallichiania Zucc.	Poonch, Bufliaz forest, 2150 m, 8.8.1987, *G. H. Dar* 9796.
Angiosperms: Dicotyledons	
Acanthaceae	
Aechmanthera tomentosa Nees.	Rajouri, Dudag, 1000 m, 20.1.2010, *Akhtar* 1058.
Hemigraphis latebrosa Nees	Rajouri, Darhal,1650 m, 7.1.2010, *Akhtar* 1042.
Justicia adhatoda L.	Rajouri, Sunderbani, 600 m, 6.1.2010, *Akhtar* 1103.
Justicia simplex D. Don	Rajouri, Ujhan, 1000 m, 27.9.1988, *G. H. Dar* 9783.
Lepidagathis incurva Buch.-Ham. ex D. Don	Rajouri, Chingus (Nowshera), 860 m, 6.1.2010, *Akhtar* 1109; Rajouri, Chowdhary Nar, 1100 m, 2.3.1988, *G. H. Dar* 9613.
Amaranthaceae	
Amaranthus caudatus L.	Rajouri, Darhal-Poonch Road, 1300 m, 8.1.2010, *Akhtar* 1623.
Amaranthus spinosus L.	Rajouri, City, wastelands and roadsides, 950 m, 23.8.1987, *G. H. Dar* 9327.
Amaranthus tricolor L.	Rajouri, Behrote 1000 m, 22.12.1987, *G. H. Dar* 9499; Rajouri, Chowdhary Nar, 1050 m, 15.9.1987, *G. H. Dar* 9359, 9368; Rajouri, 20.11.1987, *G. H. Dar* 9467.
Amaranthus viridis L.	Rajouri, Kalakote, 750 m, 20.11.1987, *G. H. Dar* 9472; Rajouri, Palma, 950 m, 20.10.1987, *G. H. Dar* 9449.
Achyranthes aspera L.	Poonch, Bufliaz, 1900 m, 12.8.1987, *G. H. Dar* 9260.
Achyranthes aspera var. *argentea* Hook. f.	Rajouri, Shahdara Sharief, 1560 m, grassy roadsides, 16.8.1987, *G. H. Dar* 9285.
Aerua sanguinilenta (L.) Blume	Rajouri, Kheora. 1000 m, 16.8.1987, *G. H. Dar* 9375.
Alternanthera sessilis (L.) DC.	Rajouri, near Airport, 950 m, masonry bunds along roadsides, 4.8.1987, *G. H. Dar* 9240; Rajouri, 20.4.1988, *G. H. Dar* 9741.
Celosia argentea L.	Rajouri, Fatehpur, 960 m, 23.11.1987, *G. H. Dar* 9480.
Gomphrena celosioides Hart.	Rajouri, near Darhal bridge, along roadsides, 1200 m, 6.10.1987, *G. H. Dar* 9420.
Apiaceae	
Bupleurum linearifolium DC.	Noorichumb, 2200 m, 12.8.1987, *G. H. Dar* 9274.
Coriandrum sativum L.	Rajouri, Thanna Mandi, 1450 m, cultivated, 29.2.1988, *G. H. Dar* 9611; Rajouri, Fatehpur, 1100 m, 22.11.1987, *G. H. Dar* 9477; Rajouri, Behrote, 1100 m, 3.1.1988, *G. H. Dar* 9505.
Daucus carota L.	Poonch, Lohren, 2100 m, 10.1.2010, *Akhtar* 1408.
Foeniculum vulgare Miller	Rajouri, 950 m, 20.2.1988, *G. H. Dar* 9582.
Pimpinella stewartii (Dunn) E. Nasir	Rajouri, 950 m, single plant in flower bed, flowers white, 31.8.1988, *G. H. Dar* 9761.

Table 1. ***Continued.***

PLANT TAXA	DETAILS OF EXSICCATAE
Scandix pectin-veneris L.	Rajouri, 950 m, 5.3.1988, *G. H. Dar* 9657; Rajouri, Jawhar Nagar, 970 m, 15.2.1988, *G. H. Dar* 9560; Poonch, Lohren, 2100 m, 10.1.2010, *Akhtar* 1408.
Araliaceae	
Hedera nepalensis Koch.	Poonch, Bufliaz forest, 2200 m, 10.1.2010, *Akhtar* 1246; Rajouri, Palma, 1900 m, *G. H. Dar* 9299.
Asclepiadaceae	
Pergularia extensa N.E. Brown	Rajouri, roadsides, 950 m, 6.1.2010, *Akhtar* 1105 a.
Vincetoxicum hirundinaria Medicus	Rajouri, Nowshera road, 800 m, 6.1.2010, *Akhtar* 1105 b.
Asteraceae	
Achillea millefolium L.	Rajouri, Shahdara Sharief, 1550 m, grassy slopes along road, 16.8.1987, *G. H. Dar* 9286; Poonch, Bufliaz, 2100 m, 8.1.2010, Akhtar 1238.
Anaphalis cinnamomea C. B. Clarke	Rajouri, Ujhan, 1100 m, 27.9.1988, *G. H. Dar* 9772; Rajouri, Kheora, 1100 m, 20.10.1987, *G. H. Dar* 9447.
Anaphalis contorta Hook. f.	Rajouri, Ujhan, 1100 m, 20.11.1987, *G. H. Dar* 9476.
Arctium lappa L.	Poonch, Bufliaz, 1800 m, 9.1.2010, *Akhtar* 940.
Artemisia absinthium L.	Poonch, Lohren, 2100 m, 9.1.2010, *Akhtar* 1240.
Artemisia vulgaris L.	Rajouri: Dangri, and Poonch: Lohren, 2100 m, 5.1.2010, *Akhtar* 1081.
Artemisia nilagirica (Clarke) Pamp.	Rajouri, Kheora, 1000 m, 15.9.1987, *G. H. Dar* 9375.
Artemisia parviflora Roxb.	Rajouri, Palma, 1000 m, 15.10.1987, *G. H. Dar* 9431; Rajouri, Ujhan, 27.9.1988, *G. H. Dar* 9777.
Artemisia tournefortiana Reichb.	Rajouri, Rathal, 1210 m, 21.1.2010, *Akhtar* 1065.
Aster albescens Hand.-Mazz.	Poonch, 950 m, 16.8.1987, *G. H. Dar* 9865.
Bidens chinensis (L.) Willd.	Rajouri, Kheora, 1000 m, rays white, disk yellow, 19.10.1988, *G. H. Dar* 9796.
Bidens tripartita L.	Rajouri, Shahdara-Sharief, 1550 m, 20.1.2010, Akhtar 1062; Rajouri, Kheora, 1000 m, 15.3.1988, *G. H. Dar* 9665.
Calendula officinalis L.	Poonch, 950 m, 8.1.2010, Akhtar 959, cultivated.
Carduus edelbergii Rech. f.	Poonch, Lohren, 2200 m, 5.1.2010, Akhtar 955.
Centaurea iberica Trev.ex Spreng.	Poonch, Lohren, 2200 m, 5.1.2010, *Akhtar* 950.
Cichorium intybus L.	Rajouri, Kheora, 1000 m, 20.8.1988, *G. H. Dar* 9745.
Cirsium arvense (L.) Scop.	Poonch, Lohren, 2150 m, 5.1.2010, *Akhtar* 1555.
Cirsium falconeri (Hook. f.) Petrak	Poonch, Bufliaz forest, 2200 m, 5.1.2010, *Akhtar* 1555.
Cirsium wallichii DC.	Rajouri: Budhal, and Poonch: Lohren, 2150 m, 5.1.2010, *Akhtar* 1155.
Conyza bonariensis (L.) Cronquist	Rajouri, Darhal, 1550 m, 22.9.1987, *G. H. Dar* 4515; Poonch, Mendhar, 1000 m, 6.2.1988, *G. H. Dar* 9528.
Conyza canadensis (L.) Cronquist	Rajouri, Ujhan, 1100 m, 20.8.1988, *G. H. Dar* 9776; Rajouri, Shahdara Sharief, 1550 m, gravel slopes along road 16.8.1987, *G. H. Dar* 9287.
Cotula anthemoides L.	Poonch, Lohren, 2100 m, 9.1.2010, *Akhtar* 1643 a.
Crepis sancta Babc.	Poonch , Lohren road, 1800 m, 9.1.2010, *Akhtar* 1643 b.
Echinops cornigerus DC.	Poonch, Bufliaz, 2200 m, 20.10.2005, *Z. S. Khan* 1234.
Galinsoga parviflora Cav.	Rajouri, Shahdara Sharief, 1500 m, 12.7.1988. *G. H. Dar* 9569; Rajouri, Behrote, 1200 m, 10.1.1988, *G. H. Dar* 9506; Poonch, Lohren forest, 2100 m, 9.1.2010, *Akhtar* 1243.
Gnaphalium luteo-album L.	Rajouri, Jawhar Nagar,950 m, 5.3.1988, *G. H. Dar* 9637; Rajouri, Darhal ,1600 m, 5.3.1988, *G. H. Dar* 9626 and 25.4.1988, *G. H. Dar* 9748; Moradpur, Nowshera , 830 m, 10.4.1988, *G. H. Dar* 9705.
Helianthus annuus L.	Rajouri, Rathal, 1200 m, 21.1.2010, *Akhtar* 1565, cultivated.
Inula cappa (Ham.) DC.	Rajouri, Palma, 1000 m, 20.10.1987. *G. H. Dar* 9452; Rajouri, Ujhan, 1100 m, 15.10.1987, *G. H. Dar* 9433; Rajouri, Kheora, 1000 m, shrubby plant growing along stony slopes, flowers yellow, 19.10.1988, *G. H. Dar* 9795.
Ixeris polycephala Cass.	Poonch, Mendhar, 950 m, heads yellow, 6.2.1988, G. *H. Dar* 9520.
Lactuca dissecta D. Don	Poonch-Bufliaz road, 1800 m, 8.1.2010, *Akhtar* 957.
Lactuca serriola L.	Rajouri, Kalakote, 780 m, 5.1.2010, *Akhtar* 1079.
Launaea procumbens (Roxb.) Ram. & Raj.	Rajouri, Chowdhary Nar, 1100 m, 24.11.1987, *G. H. Dar* 9482.
Myriactis nepalensis Less	Rajouri, Darhal, 1550 m, 25.4.1988, *G. H. Dar* 9749.
Parthenium hysterophorus L.	Rajouri, Nowshera-Poonch roadsides, 900 m, 6.1.2010, *Akhtar* 1100.
Saussurea heteromalla (D. Don) Hand.-Mazz.	Rajouri, Chingus, 860 m, 6.1.2010, *Akhtar* 1081.
Sonchus arvensis L	Poonch, Mendhar, 950 m, sides of water courses, heads yellow, 6.2.1988, *G. H. Dar* 9521.
Siegesbeckia orientalis L.	Rajouri, Behrote, 1000 m, 27.12.1987, *G. H. Dar* 9502.
Tagetes minuta L.	Poonch, Pheeri Jhalas, Mendhar, 1150 m, 5.1.2010, *Akhtar* 1162.
Taraxacum officinale Weber	Rajouri, Kheora, 1000 m, 5.3.1988, *G. H. Dar* 9620; Poonch, Bufliaz, 2100 m, 8.1.2010, *Akhtar* 1257.
Tussilago farfara L.	Poonch, Lohren forest, 2250 m, 9.1.2010, *Akhtar* 1245.
Vernonia cinerea (L.) Lees.	Rajouri, 950 m, 20. 03.1988, *G. H. Dar* 9684.
Xanthium strumarium L.	Rajouri, Revenue Colony, 950 m, 1.12.1987, *G. H. Dar* 9487.

Table 1. ***Continued.***

PLANT TAXA	DETAILS OF EXSICCATAE
Balsaminaceae	
Impatiens balsamina L.	Rajouri, Darhal, Bodharoo, 1550 m, 20.9.1987, *G. H. Dar* 9400; Rajouri, Chowdhary Nar, 15.9.1987, *G. H. Dar* 9316; Poonch, Lohren, 2200 m, 9.1.2010, *Akhtar* 1258.
Berberidaceae	
Berberis glaucocarpa Stapf.	Rajouri , Muradpur, Nowshera, 830 m, 15.3.1988, *G. H. Dar* 9670.
Berberis lycium Royle	Rajouri, Darhal, 1550 m, 20.3.1988, *G. H. Dar* 9682; Poonch, Lohren, 2100 m, 9.1.2010, *Akhtar* 1152.
Boraginaceae	
Anchusa arvensis (L.) Bieb. ssp. *orientalis* (L.) Nordh	Rajouri, roadsides, 950 m, 5.3.1988, *G. H. Dar* 9648.
Cynoglossum glochidiatum Wall. ex Benth.	Poonch, Bufliaz, 2000 m, 12.8.1987, *G. H. Dar* 9258.
Trichodesma indicum (L.) R. Br. var. *amplexicaule* (Roth) T. Cooke	Rajouri, Kheora, 1000 m, exposed slopes; flowers light blue, 15.9.1987, *G. H. Dar* 9371.
Brassicaceae	
Arabidopsis thaliana (L.) Heynh.	Poonch, Mendhar, 900 m, flowers white, 6.2.1988, G. *H. Dar* 9538.
Brassica juncea (L.) Czern. & Coss.	Poonch, Mendhar, 900 m, cultivated, flowers yellow, 6.2.1988, *G. H. Dar* 9525
Brassica rapa L ssp. *campestris* (L.) Clapham.	Rajouri , Fatehpur ,1000 m, 21.11.1987, *G. H. Dar* 9475.
Capsella bursa-pastoris (L.) Medik.	Poonch, Mendhar, 900 m, 6.2.1988, *G. H. Dar* 9542; Rajouri, Jawhar Nagar, 1000 m, 15.7.1988, *G. H. Dar* 9550.
Cardamine impatiens L.	Rajouri, Thanna Mandi,1400 m, 15.4.1988, *G. H. Dar* 9727.
Coronopus didymus (L.) Sm.	Rajouri, City, Ward 10, 950 m, Masonry bunds along vegetable fields, 25.8.1987, *G. H. Dar* 9338.
Eruca sativa Mill.	Poonch, Mendhar, 900 m, in cultivated mustard fields, flowers yellowish, 6.2.1988, *G. H. Dar* 9526; Rajouri, Darhal, 1550 m, 26.2.1988. *G. H. Dar* 9599.
Lepidium capitatum Hook. f. & Thomson	Rajouri, Shahdara Sharief, 1550 m, 17.2.1988, *G. H. Dar* 9572; Rajouri, Behrote, 1100 m, 1.1.1988. *G. H. Dar* 9503.
Lepidium sativum L.	Rajouri, Darhal, 1550, 23.2.1988, *G. H. Dar* 9587.
Lepidium virginicum L.	Rajouri City, near Army Theater, roadsides slopes, 950 m, 22.8.1987, *G. H. Dar* 9313
Nasturtium officinale R. Br.	Rajouri, Darhal, 1550 m, 15.4.1988, *G. H. Dar* 9730.
Buxaceae	
Buxus wallichiana Baill.	Rajouri, Gabar Forest, Budhal; Poonch, Bufliaz , 2000 m, 8.1.2010, *Akhtar* 1198.
Basellaceae	
Basella rubra L.	Rajouri, Gabar Forest, Budhal, 2000 m, 6.1.2010, *Akhtar* 992.
Caesalpiniaceae	
Bauhinia variegata L.	Rajouri, main road, 950 m, 5. 1.2010, *Akhtar* 1219.
Cassia occidentalis L.	Rajouri, 950 m, flowers pure yellow, 2.9.1987, *G. H. Dar* 9385 a.
Cassia tora L.	Rajouri, 950 m, 20.9.1987, flowers pure yellow, *G. H. Dar 9385 b.*
Campanulaceae	
Campanula pallida Wallich	Rajouri, Jawhar Nagar, 950 m, 15.4.1988 , G. *H. Dar* 9731.
Cannabaceae	
Cannabis sativa L.	Rajouri, 950 m, near bus stand, abundant on wastelands, roadsides and along vegetable fields, 22.8.1987, *G. H. Dar* 9318; Poonch, Lohren road 1900 m, 9.1.2010, *Akhtar* 1290.
Capparaceae	
Cleome viscosa L.	Poonch, 950 m, sandy slopes, flowers yellow, 18.10.1988, *G. H. Dar* 9793.
Caprifoliaceae	
Viburnum grandiflorum Wall. ex DC.	Rajouri, 950 m, 5.8.1987, *G. H. Dar* 9243; Poonch, Lohren, 1900 m, 09. 01. 2010, *Akhtar* 1218.
Caryophyllaceae	
Cerastium cerastoides (L.) Britton	Poonch, Surankote nullah, 1500 m, 7.1.2010, *Akhtar* 1256.
Dianthus crinitus Smith	Rajouri, 950 m, 30.4.1988, *G. H. Dar* 9652.
Stellaria media (L.) Vill.	Rajouri, Budhal, 2000 m, 20.2.1988, *G. H. Dar* 9583; Poonch, Lohren, 2000 m, 9.1.2010, *Akhtar* 1412
Silene conoidea L.	Rajouri, Sora, Behrote, 1000 m, 20.12.1987, *G. H. Dar* 9494
Silene vulgaris (Moench) Garcke	Poonch, Lohren, 2100 m, 9.1.2010, *Akhtar* 918.
Vaccaria pyramidata Medik	Rajouri, 950 m, 30.4.1988, *G. H. Dar* 9752.
Chenopodiaceae	
Chenopodium album L.	Poonch, Lohren, 2100 m, 9.1.2010, *Akhtar* 1503.
Chenopodium botrys L.	Poonch, Lohren, 2100 m, 9.1 2010, *Akhtar* 1261.
Chenopodium foliosum (Moench) Aschers.	Poonch, Lohren, 2100 m, 09. 01. 2010, *Akhtar* 961.
Chenopodium hybridum L.	Poonch, Bufliaz, 2000 m, 9.1 2010, *Akhtar* 965.
Chenopodium murale L.	Poonch, Lohren, 2100 m, 9.1.2010, *Akhtar* 962.
Kochia scoparia (L.) Schrad.	Rajouri, 950 m, 20.9.1987, *G. H. Dar* 9395.
Convolvulaceae	
Convolvulus arvensis L.	Poonch, Bufliaz forest, 2000 m, 8.1.2010, *Akhtar* 1507.

TABLE 1. ***CONTINUED.***

PLANT TAXA	DETAILS OF EXSICCATAE
Ipomoea crassicaulis (Benth.) B. L. Robinson	Rajouri, 950 m, gregarious milky shrub, 15.9.1987, *G. H. Dar* 9372.
Ipomoea hispida (Vahl) Roem. & Schult.	Rajouri, Khoblan ,1000 m, 26.12.1987, *G. H. Dar* 9501
Ipomoea nil (L.) Roth	Rajouri, 950 m, 22. 08. 1987, *G. H. Dar* 9324; 20.10.1987, *G. H. Dar* 9455.
Ipomoea purpurea Roth	Poonch, Bufliaz forest, 2000 m, 8.1.2010, *Akhtar* 907, 1401.
Cucurbitaceae	
Diplocyclos palmatus (L.) C. Jaffery	Rajouri, Sunderbani, 600 m, climbing along hedges, 2.9.1987, *G. H. Dar* 9347.
Ehretiaceae	
Ehretia aspera Roxb.	Nowshera, Moradpur, 820 m, 10.4.1988, *G. H. Dar* 9704.
Ericaceae	
Rhododendron arboreum Sm.	Poonch, Kanglie, Surankote, 1280 m, 9.1.2010, *Akhtar* 1122.
Euphorbiaceae	
Euphorbia helioscopia L.	Rajouri, Shahdara Sharief, 1550 m, waste ground 17.8.1988, *G. H. Dar* 9566.
Euphorbia hispida Boiss.	Poonch, Surankote, 1300 m, 10.1.2010, *Akhtar* 1250.
Euphorbia wallichii Hook. f.	Poonch, Lohren, 2200 m, 9.1.2010, *Akhtar* 1249.
Phyllanthus emblica L. (*Emblica officinalis* Gaertn.)	Rajouri, Dak Bunglaw, 950 m, 5.1.2010, *Akhtar* 1220.
Fagaceae	
Quercus baloot Griffith	Poonch, Bufliaz forest, 2000 m, 8.1.2010, Akhtar 1138.
Quercus incana Roxb.	Poonch, Khataoyian, Mendhar, 1190 m, 10.1.2010., *Akhtar* 1133.
Quercus glauca Thunb.	Rajouri, Haryan, Budhal, 1800 m, 5.1.2010, *Akhtar* 1098.
Fumariaceae	
Fumaria indica (Haussk.) Pugsley	Rajouri, 950 m, 5.3.1988, *G. H. Dar* 9638; Poonch, Lohren, 2100 m, 9.1.2010, *Akhtar* 1280.
Gentianaceae	
Swertia angustifolia Buch.-Ham ex D. Don	Rajouri, Chowdhary Nar, 1100 m, 15.9.1987, *G. H. Dar* 8361; Rajouri, Ujhan, 1100 m, 27.9.1988, *G. H. Dar* 9779.
Gentiana aprica Decne.	Rajouri, 950 m, 5.3.1988, *G. H. Dar* 9629.
Gentiana carinata Griseb.	Poonch, Bufliaz, Mughal road, 2250 m, 9.1.2010, *Akhtar* 980.
Gentiana argentea (Royle ex D. Don) DC.	Poonch, Surankote, 1300 m, grassy slopes, 15.4 1988, *G. H. Dar* 9733.
Geraniaceae	
Geranium rotundifolium L.	Rajouri, Kheora, 1000 m, 5.3.1988, *G. H. Dar* 9619; Rajouri, Nowshera, 800 m, 20.4.1988, *G. H. Dar* 9736.
Hypericaceae	
Hypericum perforatum L.	Rajouri, Fatehpur, 1000 m, 22.11.1987, G. *H. Dar* 9478.
Hippocastanaceae	
Aesculus indica (Wall. ex Cambess.) Hook. f.	Poonch, Bufliaz, 2000 m, 10.1.2010, *Akhtar* 1234.
Hamamelidaceae	
Parrotiopsis jacquemontiana (Dcne.) Rehder	Poonch, Bufliaz forest, 2100 m, 7.1.2010, *Akhtar* 1233.
Lamiaceae	
Ajuga bracteosa Wall. ex Benth.	Rajouri, Chowdhary Nar, 1050 m, dry slopes, 15.9.1987, *G. H. Dar* 9370.
Ajuga parviflora Benth.	Rajouri, Darhal, 1550 m, borders of cultivated fields, 20.3. 1988, *G. H. Dar* 9680; Poonch, Lohren, 2100 m, 9.1.2010, *Akhtar* 1102.
Clinopodium umbrosum (M. Bieb.) C. Koch	Rajouri, 950 m, in cultivated fields, 5.3.1988, *G. H. Dar* 9650; Kheora, Rajouri 30.3.1988, *G. H. Dar* 9697.
Colebrookea oppositifolia Smith	Rajouri, Moradpur, Nowshera, 820 m, 10.4.1988, *G. H. Dar* 9706; Mendhar, Pokrow, 1350 m, 8.1.2010, *Akhtar*1134.
Isodon rugosus (Wall. ex Benth.) Codd	Rajouri, 950 m, sandy slopes, 20.9.1987, *G. H. Dar* 9384.
Lamium amplexicaule L.	Rajouri, Jawhar Nagar, 950 m, along vegetable fields 5.2.1988, *G. H. Dar* 9512; Shahdara Sharief, 1550 m, 17.2.1988, *G. H. Dar* 9567.
Lycopus europaeus L.	Rajouri, Ujhan, 1000 m, damp fields, 15. 9. 1987, *G. H. Dar* 9354.
Leucas cephalotes (Roth) Spreng.	Rajouri, Kheora, 1000 m, scrubby slopes, 5.3.1988, *G. H. Dar* 9622.
Leucas mollissima Wall. ex Benth.	Rajouri, Kheora, 1000 m, 20.5.1988, *G. H. Dar* 9754.
Mentha longifolia (L.) L.	Poonch, Gabbar forest, 1800 m, 5.1.2010, *Akhtar* 1427.
Mentha royleana Benth.	Rajouri, Chowdhary Nar, 1050 m, boarders of cultivated fields, 15.9.1987, *G. H. Dar* 9365.
Micromeria biflora (Buch.-Ham. ex D. Don) Benth.	Poonch, Mendhar, 900 m, sandy slopes, 6.2.1988, *G. H. Dar* 9531; Rajouri, Fatehpur, 1000 m, dry slopes, 24 11.1987, *G. H. Dar* 9481.
Nepeta hindostana (Roth) Haines	Rajouri, Kheora, 1000 m, 4.3.1988, *G. H. Dar* 9617.
Ocimum basilicum L.	Rajouri, Manjakot, 1000 m, in cultivated fields, 20.3.1988, *G. H. Dar* 9689.
Origanum vulgare L.	Rajouri, Shahdara Sharief, 1550 m, gravel slopes along roadsides, flowers white, 16.8.1987, *G. H. Dar* 9290.
Prunella vulgaris L.	Rajouri, Ujhan, 1000 m, moist roadsides, 27. 09. 1988, *G. H. Dar* 9785; Poonch, Gabber forest, 1800 m, 5.1.2010, Akhtar 927.

Table 1. ***Continued.***

PLANT TAXA	DETAILS OF EXSICCATAE
Stachys emodi Hedge	Rajouri, Ujhan, 1000 m, moist roadsides, 27.9.1988, *G. H. Dar* 9783.
Thymus linearis Benth.	Poonch, Lohren forest, 2200 m, 9.1.2010, *Akhtar* 1501.
Juglandaceae	
Julglans regia L.	Poonch, Gabbar forest, 1800 m, 5.1.2010, *Akhtar*1201.
Buddlejaceae	
Buddleja asiatica Lour.	Rajouri, Ujhan, 1050 m, 3.3.1988, *G. H. Dar* 9614; Poonch proper, 950 m, 8.1.2010, *Akhtar* 1278.
Buddleja crispa Benth.	Poonch Road, 950 m, 10.1.2010, *Akhtar* 1210.
Lythraceae	
Woodfordia fruticosa (L.) S. Kurz	Poonch, Noorichumb, 2200 m, 12.8.1987, *G. H. Dar* 9267.
Malvaceae	
Abutilon bidendatum Hochst. ex A. Rich.	Rajouri, Ujhan, 1000 m, 27.9.1988, *G. H. Dar* 9782 (seeds 3 per mericarp).
Hibiscus schizopetalus (Masters) Hook. f.	Rajouri, City, Ward No. 10, 950 m, grown as ornamental shrub, flowers red, 22.8.1987, *G. H. Dar* 9308.
Malva neglecta Wallr.	Poonch, Lohren, 2200 m, 9. 1.2010, *Akhtar* 923.
Malva parviflora L.	Shahdara Sharief, Rajouri, 1550 m, plants not more than 30 cm high; flowers purplish-pink, 17.2.1988, *G. H. Dar* 9563; Thanna Mandi, plants to 50 cm high, flowers pinkish, 22.8.1987, *G. H. Dar* 9330. The present collections represent the first authentic specimens of this species in KASH, because all its earlier reports from the Jammu and Kashmir State have been found to be based on misidentification of its allied species, *M. microcarpa* Pers. (see Naqshi *et al*. 1988: 1514). The main distinguishing character of *M. parviflora* is its mericarps having winged and distinctly hooked margins.
Malvastrum coromandelianum (L.) Garcke	Rajouri city, near bus stand, 950 m, abundant along roadsides, lawns, cultivated fields, wastelands, etc., flowers yellow, 22.8.1987, *G. H. Dar* 9323; Rajouri, Jawharnagar, 0950 m, 15.4.1988, *G. H. Dar* 9725; Rajouri city, Kitchen garden sides, 22.8.1987, *G. H. Dar* 9326; Rajouri, Dack Banglow lawn, abundant, plants ascending to erect, flowers yellow, 31.8.1988, *G. H. Dar* 9758; Ujhan, Rajouri 15.9.1987, *G. H. Dar* 9353 and 20.9.1987, *G. H. Dar* 9408b; Rajouri, Nowshera, 820 m, 6.1.2010, *Akhtar* 1110.
Sida cordata (Burm. f.) Borssum Waalkes	Rajouri, 950 m, 5.3.1988, *G. H. Dar* 9628.
Sida rhombifolia L. (*S. yunnanensis* Hu.)	Rajouri, Ujhan, 1000 m, roadside slopes, 27.9.1988, *G. H. Dar* 9787.
Meliaceae	
Melia azedarach L.	Rajouri, 950, roadsides, 20.3.1988, *G. H. Dar* 9691; Rajouri, 950 m, 6.1.2010, *Akhtar* 1299. The drupes are persistent through the winter and fall by ending February.
Toona ciliata Roem.	Rajouri, Darhal road, 1400 m, 6.1.2010, *Akhtar* 1221.
Moraceae	
Ficus carica L.	Rajouri, Darhal, 1550 m and Poonch, Surankote, 1300 m, 6.1.2010, *Akhtar*1222.
Ficus palmata Frossk.	Rajouri, Budhal, 1800 m, 5.1.2010, *Akhtar* 1153.
Morus alba L.	Poonch, Lohren, 2000 m, 9.1.2010, *Akhtar* 1223.
Myrtaceae	
Callistemon citrinus (Curtis) Stapf	Budhal, Haryan, 1800 m, 5.1.2 010, *Akhtar* 1140.
Eucalyptus alba Reinw. ex Bl.	Poonch, Dak Bunglow, 950 m, 8.1.2010, *Akhtar* 1123.
Eucalyptus globulus Labbil.	Rajouri, Darhal, 1550 m, and Poonch road, 950 m, 8.1.2010, *Akhtar* 1645.
Eucalyptus tereticornis Sm.	Rajouri road, 950 m, 7.10.2006, Z. *S. Khan* 1345.
Mimosaceae	
Albizia lebbeck (L.) Benth.	Poonch, Surankote road, 1350 m, 10.1.2010, *Akhtar* 1221.
Oleaceae	
Olea ferruginea Royle	Rajouri Biodiversity Park, 960 m, 10.1.2010, *Akhtar* 1224.
Onagraceae	
Oenothera rosea Soland.	Rajouri, Soland, 10.4.1988, *G. H. Dar* 9721; Poonch, Bufliaz forest, 2000 m, 12.1.2010, *Akhtar* 1047.
Oxalidaceae	
Oxalis corniculata L.	Rajouri, Kheora, 1000 m, 27. 02. 1988, *G. H. Dar* 9681.
Papilionaceae	
Astragalus grahamianus Royle ex Benth.	Poonch, Bufliaz road, 2000 m, 9.1 2010, *Akhtar* 934.
Lotus corniculatus L.	Poonch, Mendhar, 900 m, 6.2.1988, *G. H. Dar* 9540.
Mallotus philippensis (Lam.) Muell.	Nowshera, Rajouri, 820 m, 6.1 2010, *Akhtar* 1107
Melilotus indica (L.) All.	Poonch, Mendhar, 900 m, flowers yellow, 6.2.1988, *G. H. Dar* 9539.
Trifolium fragiferum L.	Poonch, Mendhar, 900 m, cultivated as fodder, 6.2.1988, *G. H. Dar* 9541.
Trifolium pratense L.	Poonch, Lohren, 2100 m, 9.1.2010, *Akhtar* 1271.
Trifolium repens L.	Rajouri, Jawahar Nagar, 0950 m, 30.3.1988, *G. H. Dar* 9696; Poonch, Mendhar, 900 m, 6.2.1988, *G. H. Dar* 9529; Poonch, Lohren forest, 2100 m, 9.1.2010, *Akhtar* 1264.
Lathyrus aphaca L.	Rajouri, Darhal, 1550 m, 10.2.1988, G. *H. Dar* 9548.

Table 1. ***Continued.***

PLANT TAXA	DETAILS OF EXSICCATAE
Indigofera cassioides Rottl. ex DC.	Rajouri, Nowshera, 820 m, 30.3.1988, *G. H. Dar* 9685.
Indigofera heterantha Wall. ex Brandis	Poonch, Dookrie ,1700 m, 11.1.2010, *Akhtar* 1227.
Indigofera cordifolia Heyne ex. Roth	Rajouri, 950 m, 5.3.1988, *G. H. Dar* 9632.
Vicia sativa L.	Rajouri, Kheora, 1000 m, 26.2.1988, *G. H. Dar* 9592; Poonch, Bufliaz road, 1700 m, 7.1.2010, *Akhtar* 1459.
Medicago lupulina L.	Rajouri, 950 m, 15.3.1988, *G. H. Dar* 9678.
Medicago polymorpha L.	Rajouri, Jawhar Nagar, 0950 m, 10.3.1988, *G. H. Dar* 9658.
Medicago sativa L.	Poonch, Bufliaz road,1800 m, 7.1.2010, *Akhtar* 1453.
Tephrosia strigosa (Dalz.) Sant. & Maheshw.	Rajouri, Ujhan, 1000 m, 27.7.1988, *G. H. Dar* 9770.
Robinia pseudoacacia L.	Rajouri, Gabber forest, Budhal, 1800 m, *Akhtar* 1202.
Desmodium laxiflorum DC.	Rajouri, Ujhan, 1000 m, 27.9.1988, *G. H. Dar* 9788.
Crotalaria medicaginea Lamk.	Rajouri, Ujhan, 1000 m, 27.9.1988, *G. H. Dar* 9780.
Lespedeza juncea (L. f.) Pers.	Rajouri, Fatehpur, 1000 m, 20.11.1987, *G. H. Dar* 9470.
Plantaginaceae	
Plantago lanceolata L.	Rajouri, Budhal, 1800 m, 5.1.2010, *Akhtar* 1511.
Plantago major L	Rajouri, Budhal, 1800 m, 5.1.2010, *Akhtar* 1512.
Platanaceae	
Platanus orientalis L	Rajouri, Darhal, 1560 m, 6.1 2010, *Akhta* 1581
Papaveraceae	
Argemone mexicana L.	Rajouri, City, 950 m, roadside slopes, flowers purple, anthers yellow, 25.8.1987, *G. H. Dar* 9342.
Pittosporaceae	
Pittosporum nepaulense (DC.) Rehder & Wilson	Poonch, Mendhar, 900 m, 6.2.1988, *G. H. Dar* 9537.
Plumbaginaceae	
Plumbago zeylanica L.	Rajouri, 950 m, scrubby slopes, 20.8.1987, *G. H. Dar* 9295.
Podophyllaceae	
Podophyllum hexandrum Royle.	Poonch, Lohren forest, 2200 m, 9.1.2010, *Akhtar* 951.
Polygonaceae	
Fagopyrum esculentum Moench	Rajouri, Rathal, 1200 m, 20.1.2010, *Akhtar* 1057.
Oxyria digyna (L.) Hill	Poonch, Lohren, 2100 m, 9.1.2010, *Akhtar* 951.
Polygonum orientale L.	Rajouri, Rathal, 1200 m, 20.1.2010, *Akhtar* 1056.
Rumex acetosa L.	Poonch, Bufliaz, 1800 m, 10. 01. 2010, *Akhtar* 1465.
Rumex dentatus L.	Poonch, Bufliaz, 1800 m, 10.1.2010, *Akhtar* 965.
Rumex hastatus D. Don	Rajouri, Darhal, 1550 m, and Poonch, Bufliaz, 1800 m, 10.1.2010, *Akhtar* 1310.
Rumex nepalensis Spreng.	Poonch, Lohren, 2100 m, 9.1.2010, *Akhtar* 1254.
Polygonum affine D. Don	Poonch, Lohren, 2100 m, 9.1.2010, *Akhtar* 954.
Polygonum hydropiper L.	Rajouri, Palma, 1000 m, 20.10.1987, *G. H. Dar* 9454.
Polygonum plebejum R. Br.	Rajouri, 950 m, grasslands, 5.3.1988, *G. H. Dar* 9649.
Portulacaceae	
Portulaca oleracea L.	Rajouri, city, 950 m, waste ground near bus stand, 22.8.1987, *G. H. Dar* 9306.
Primulaceae	
Anagallis arvensis L.	Rajouri, Jawharnagar, 1100 m, 10.2.1988, *G. H. Dar* 9546.
Androsace rotundifolia Hardw.	Poonch, Lohren, 2100 m, 9.1.2010, *Akhtar* 1054.
Androsace umbellata (Lour.) Merr.	Poonch; Mendhar, 900 m, along water courses, flowers white, 6.2.1988, *G. H. Dar* 9537.
Punicaceae	
Punica granatum L.	Rajouri, Nowshera, 820 m, growing wild on hillocks, 20.9.1987, *G. H. Dar* 993 ; Poonch, Lohren, 2100 m, 6.1 2010, *Akhtar* 1225.
Ranunculaceae	
Anemone obtusiloba D. Don	Rajouri, Budhal forest, 2200 m, 5.1.2010, *Akhtar* 1549.
Aquilegia fragrans Benth.	Rajouri, Budhal forest, 2200 m, 5.1.2010, *Akhtar* 1550.
Caltha palustris L. var. *alba* (Jacq. ex Camb.) Hook. f. and Thoms.	Poonch, Lohren, 2100 m, 9.10.2010, *Akhtar* 1609.
Clematis gouriana Roxb.	Rajouri, Moradpur Nowshera, 820 m, 10.4 1988, *G. H. Dar* 9713; Ujhan Rajouri, 20.9.1987, *G. H. Dar* 9409.
Clematis grata Wall.	Rajouri, 950 m, 20.10.1987, *G. H. Dar* 9457.
Thalictrum alpinum L.	Poonch, Lohren, 2100 m, 9.1.2010, *Akhtar* 1254.
Ranunculus arvensis L.	Poonch, Mendhar, 900 m, common, 6.2.1988, *G. H. Dar* 9533.
Ranunculus hirtellus Royle	Poonch, Lohren, 2100 m, 9.1.2010, *Akhtar* 1609
Ranunculus laetus Wall. ex Hook. f. & Thoms	Poonch, Lohren, 2100 m, 9.1.2010, *Akhtar* 1409.
Ranunculus sceleratus L.	Rajouri, Kheora, 1000 m, 15.3.1988, *G. H. Dar* 9666.

TABLE 1. ***CONTINUED.***

PLANT TAXA	DETAILS OF EXSICCATAE
Resedaceae	
Oligomeris linifolia (Vahl.) Macbride	Rajouri, Haryan, Budhal, 1800 m, 5.1 2010, *Akhtar 1151.*
Rhamnaceae	
Ziziphus mauritiana Lamk.	Rajouri, in front of D.C. office, 950 m, large shrub, up to 3 m, leaves leathery, green above, brownish beneath, 10.10.1987, *G. H. Dar* 9430, 'Ber'; Poonch, Bufliaz, 1900 m, 8.1.2010, *Akhtar* 1099.
Ziziphus mauritiana Lam. var. *fruticosa* (Haines) Seb. and Balak.	Rajouri, Kheora, 1000 m, roadside hedges, 8.10 1987, fruits yellowish-green, *G. H. Dar* 9426.
Ziziphus oxyphylla Edgew.	Rajouri, Kheora, 1000 m, roadside hedges, mature fruits red, 8.10.1987 *G. H. Dar* 9424.
Rosaceae	
Cydonia oblonga Mill.	Poonch, Surankote, 1350 m, 8.1.2010, *Akhtar* 1426.
Cotoneaster nummularia Fisch. & C. A. Mey.	Poonch, Lohren, 2100 m, 9.1.2 010, *Akhtar* 1209.
Duchesnia indica (Andr.) Focke,	Rajouri, Kheora, 1000 m, 20.5.1988, *G. H. Dar* 9753; Poonch Mendhar, 6.2.1988, *G. H. Dar* 9544.
Fragaria nubicola Lindley ex Lacaita	Poonch, Lohren, 2100 m, 9.1.2010, *Akhtar* 1251.
Geum roylei Bolle	Poonch, Lohren, 2100 m, 10.1.2010, *Akhtar* 1212.
Prinsepia utilis Royle	Rajouri, Haryan Budhal, 1800 m, 5.1.2010, *Akhtar* 1365.
Potentilla nepalensis Hook.	Rajouri, Deragali, 1800 m, flowers red, 12.8.1987, *G. H. Dar* 9276.
Prunus armeniaca L.	Rajouri,, Haryan Budhal, 1800 m, 5.1 2010, *Akhtar* 1565
Pyrus pashia Buch.- Ham. ex D. Don	Poonch, Bufliaz road, 1800 m, 6.1.2010, *Akhtar* 1225.
Malus domestica Borkh	Poonch, Bufliaz, 2000 m, 9.1.2010. *Akhtar* 1424.
Prunus persica (L.) Batsch.	Poonch, Lohren, 2100 m, 9.1.2010, *Akhtar* 1527.
Prunus cerasus L.	Poonch, Lohren, 2100 m, 9.1.2010, *Akhtar* 1528.
Prunus tomentosa Thunb.	Poonch, Lohren, 2100 m, 9.1.2010, *Akhtar* 1528.
Rosa webbiana Wall. ex Royle	Poonch, Bufliaz, 2000 m, 9.1.2010, *Akhtar* 1252.
Rubus niveus Thunb.	Poonch, Lohren, 2200 m, 9.1.2010, *Akhtar* 1407.
Rubus ulmifolius Schott	Poonch, Surankote, 1350 m, 9.1.2010, *Akhtar* 1421.
Rubus ellipticus Smith	Rajouri, Jawharnagar, 0950 m, 20.2.1988, *G. H. Dar* 9580.
Spiraea bella Sims	Rajouri, Haryan, Budhal, 1800 m, 5.1.2010, *Akhtar* 1834.
Rubiaceae	
Galium asperifolium Wall.	Poonch, Lohren, 2100 m, 22.1.2010, *Akhtar* 1315.
Oldenlandia retrorsa Boiss.	Rajouri, Thani Mundi, 1400 m, 20.1.2010, *Akhtar* 1074.
Rubia cordifolia L.	Rajouri: Kheora, 1000 m, along hedges, 8.10.1987, *G. H. Dar* 9421. According to Hara and Williams (1977), the correct name for our species is *R. wallichiana* Decne (which is characterized by smaller, whitish, or grayish-white flowers and blakish fruits*)* - *R. cordifolia* is said to have red fruits and not occurring in our area.
Rutaceae	
Zanthoxylum armatum DC.	Rajouri, Thania Mandi, 1400 m, 6.1.2010, *Akhtar* 1227.
Salicaceae	
Populus ciliata Wall. ex Royle	Poonch, Lohren, 2100 m, 8.1.2010, *Akhtar* 1204.
Salix alba L.	Poonch, Bufliaz road, 1800 m, 8.1.2010, *Akhtar* 1206.
Salix babylonica L.	Rajouri, Darhal, 1550 m and Poonch, Surankote, 1350 m, 8.1.2010, *Akhtar* 1205.
Sapindaceae	
Sapindus mukorossi Gaertn.	Rajouri, Darhal, 1550 m, 6.1.2010, *Akhtar* 1228.
Scrophulariaceae	
Limosella aquatica L.	Rajouri Air field, 950 m, 4.8.1987, *G. H. Dar* 9235.
Lindenbergia indica (L.) Vatke	Rajouri, Shahdara Sharief, 1550 m, 16.8.1987, *G. H. Dar* 9281. On gravel and sandy slopes along road to shrine, flowers yellow.
Lindernia crustacea (L.) F.V. Mueller	Rajouri, Ujhan, 1000 m, moist places, 27.9.1988, *G. H. Dar* 9774*;* Rajouri Kheora, moist roadsides, flowers purple, 10.8.1987, *G. H. Dar* 9428; 05. 03. 1988, *G. H. Dar* 9640*;* Degree College campus, 1.10.1988, *G. H. Dar* 9792 (flowers white); Deragali, Poonch, 12.8.1987, *G. H. Dar* 9256.
Mimulus strictus Benth.	Rajouri, 950 m, moist places in paddy fields. Flowers light purple, (stated to be white or pale blue in Indian plants) 18.1.1988, *G. H. Dar* 9509.
Mazus japonicas (Thunb.) O. Ktze	Rajouri, Bonati, 1000 m, along cultivated fields, 5.3.1988, *G. H. Dar* 965*;* Poonch, Mendhar, 900 m, sides of water courses in cultivated fields, 6.2.1988, *G. H. Dar* 9543.
Mazus surculosus D. Don.	Poonch, Noorichumb, 2200 m, often grassy hill slopes, 12.8.1987. *G. H. Dar* 9251. A diffuse, stoloniferous plant with ± rounded leaf blades and rounded teeth or lobes.
Veronica biloba L.	Poonch, Lohren road, 1900 m, 9.1.2010, *Akhtar* 927.
Veronica persica Poir.	Rajouri, 950 m, along vegetable fields, 20.2.1988, *G. H. Dar* 9500; Poonch, Mendhar, 900 m, common, 6.2.1988, *G. H. Dar* 9534; Budhal, Rajouri, 1800 m, 5.1.2010, *Akhtar* 1159.
Veronica melissifolia Desf. ex Poir. (*V. laxa* Benth.).	Mendhar, Saki Maidian, Poonch, 900 m, 9.1.2010, *Akhtar* 1127.
Veronica beccabunga L.	Rajouri, Budhal, 1800 m, 5.1.2010, *Akhtar* 1502.

Table 1. ***Continued.***

PLANT TAXA	DETAILS OF EXSICCATAE
Wulfenia amherstiana Wall. ex Benth.	Noorichumb, Poonch, 2200 m, flowers violet blue 12.8.1987, *G. H. Dar* 9258. An interesting plant with ± horizontal flowers and far exserted filiform styles, especially conspicuous after falling of corolla.
Simaroubaceae	
Ailanthus altissima (Mill.) Swingle	Poonch, Surankote, 1350 m, 10.1.2010, *Akhtar* 1215.
Solanaceae	
Atropa acuminata Royle	Poonch, Lohren forest, 2450 m, 6.1.2010, *Akhtar* 1225.
Cestrum nocturnum L.	Rajouri, Kheora, 1000 m, 9.7.1987, G. *H. Dar* 9790.
Datura stramonium L.	Rajouri city roadsides and waste places, 950 m, flowers white, tube bluish, 22.8.1987, *G. H. Dar* 9305.
Hyoscyamus niger L.	Poonch, Lohren forest, 2300 m, 6.1.2010, *Akhtar* 925.
Nicotiana plumbaginifolia Viv.	Rajouri, Sora, 1000 m, 20.12.1987, *G. H. Dar* 9495.
Physalis minima L.	Rajouri, Kheora, 1000 m, 9.7.1987, *G. H. Dar* 9390.
Solanum miniatum Bernh. ex Willd.	Rajouri, roadsides, 950 m, 5. 3.1988, *G. H. Dar* 964; Rajouri city, along Kitchen gardens, flowers white, peduncles longer than pedicels, berries black, 28.8.1987, *G. H. Dar* 9325 (other forms with peduncles shorter than pedicles, and berries red are seen at Noorichumb); Rajouri, Budhal, 1900 m, 5.1.2010, *Akhtar* 1502.
Solanum incanum L.	Rajouri, Kalakote, 780 m, waste places, flowers cream-white, 1.9.1987, *G. H. Dar* 9346.
Solanum pseudocapsicum L.	Rajouri, Darhal, 1550 m, 6.1.2010, *Akhtar* 1589.
Solanum erianthum D. Don	Poonch, Lohren, 2200 m, 6.1.2010, *Akhtar* 1725.
Theaceae	
Eurya acuminata DC.	Poonch, Dera Ki Gali, 1800 m, 20.102006, *Z. S. Khan* 1234.
Thymeleaceae	
Daphne oleoides Schreber	Poonch, Lohren forest, 2200 m, 9.1.2010, *Akhtar* 1247.
Tiliaceae	
Grewia optiva Drummond ex Burret	Rajouri, Kheora, 1000 m, 30.3.1988, *G. H. Dar* 9686; Rajouri, 950 m, 20.10.1987, *G. H. Dar* 9458; Poonch road, 900 m, 10.1.2010, *Akhtar* 1213; Rajouri, Budhal forest, 2200 m, 8.1.2010, *Akhtar* 1230.
Corchorus aestuans L.	Rajouri, Ujhan, 1000 m, along cultivated and waste fields, 27.9.1988, *G. H. Dar* 9781. A course fibre is occasionally extracted from this plant in parts of India which is of no commercial value. The roots and leaves are said to cure gonorrhoea and used in making an injection for urethral discharge. The seeds are stomachiac and used in treating pneumonia.
Ulmaceae	
Celtis australis L.	Rajouri, Budhal forest and Poonch, Surankote, 1800 m, 5.1.2010, *Akhtar*1202.
Ulmus villosa Brandis ex Gamble	Poonch, Lohren, 2200 m, 9.1.2010, *Akhtar* 1291; Poonch, Mendhar, 900 m a frequent tree, 6.2.1988, *G. H. Dar* 9517.
Urticaceae	
Debregeasia salicifolia (D. Don) Rendle	Rajouri: Shahdara Sharief, 1550 m, common shrub with reddish brown, grey-tomentose branches and white-tomentose undersurface of leaves; male perianth light pink, 17.2.1988, *G. H. Dar* 9561.
Pilea umbrosa Wedd.	Poonch, Noorichumb, 2200 m, moist scrubby slopes, 12.8.1987, *G. H. Dar* 9278.
Urtica dioica L.	Poonch, Lohren, 2200 m, 6.1.2010, *Akhtar* 1411.
Violaceae	
Viola biflora L.	Poonch, Bufliaz forest, 1800 m, 8.1.2010, *Akhtar* 1249 b.
Viola odorata L.	Poonch, Bufliaz forest, 1800 m, 5.1.2010, *Akhtar* 1249 a.
Angiosperms: Monocotyledons	
Alliaceae	
Allium jacquemontii Kunth	Rajouri, 1000 m, sandy slopes along roadsides enroute to the Degree College, 25.4.1988, *G. H.Dar* 9445.
Araceae	
Arisaema flavum (Forssk.) Schott.	Pooonch, Noorichumb, 2200 m, common throughout, right from Rajouri, 12.8.1987, *G. H. Dar* 9248.
Arecaceae	
Phoenix humilis Royle	Rajouri city, lawns and parks, 950 m, 9.8.1993, *G. H. Dar* 9953.
Cyperaceae	
Cyperus difformis L.	Rajouri, Sora, 1000 m, 20.8.1987, *G. H. Dar* 9695.
Cyperus exaltatus Retz.	Rajouri, 950 m, 22.7.1987, *G. H. Dar* 9195.
Cyperus rotundus L.	Rajouri, Kheora, 1000 m, 22.9.1987, *G. H. Dar* 9295.
Fimbristylis bisumbellata (Forssk.) Bub.	Rajouri, 950 m, 30.8.1987, *G. H. Dar* 9945.
Scirpus juncoides Roxb.	Rajouri, Kheora, 1000 m, 21.8.1987, *G. H. Dar* 9795.
Liliaceae	
Colchicum luteum Baker	Poonch, Lohren forest, 2300 m, 9.1.2010. *Akhtar* 1294.
Fritillaria imperialis L.	Poonch, Lohren forest, 2300 m, 9.1.2010. *Akhtar* 1295.
Orchidaceae	

Table 1. ***Continued.***

PLANT TAXA	DETAILS OF EXSICCATAE
Spiranthes lancea (Thunb.) Backer	Rajouri, Thanna Mandi, 1500 m, 20.2.1988, *G. H. Dar* 9579.
Zeuxine strateumatica (L.) Schlechter	Poonch, Mendhar, 900 m, moist sides of water channels, infrequent, 6.2.1988, *G. H. Dar* 9545. A small annual herb, flowers white with reddish tinge.
Poaceae	
Agrostis munroana Aitch. & Hemsl.	Rajouri, Kheora, 1000 m, 20.10.1987, *G. H. Dar* 9439; Ujhan, Rajouri ,15.9.1987, *G. H. Dar* 9352.
Apluda mutica L.	Rajouri, Kheora, 1000 m, 20.10.1987, *G. H. Dar* 9445.
Arthraxon lancifolius (Trin.) Hochst.	Rajouri, Chingus, Nowshera, 860 m, 6.1.2010, *Akhtar* 1104.
Bothriochloa ischaemum (L.) Keng	Poonch, Lohren, 2100 m, crop field, 9.1.2010, *.Akhtar* 1278.
Brachiaria ramosa (L.) Griseb.	Rajouri, Ujhan, 1100 m, 27.9.1988, *G. H. Dar* 9879.
Bromus japonicus Thunb. ex Murr.	Poonch road, 950 m, 6.1.2010, *Akhtar* 1405.
Capillipedium assimile (Steud.) A. Camus	Rajouri, Kheora, 1000 m, 20.10.1987, *G. H. Dar* 9442.
Chrysopogon gryllus Trin. ssp. *echinulatus* (Nees) T. A. Cope	Poonch, Mendhar, 900 m, 6. 2.1988, G. *H. Dar* 9522.
Cymbopogon pospischilii (K. Schum.) C. E. Hubbard	Rajouri, Chowdhary Nar, 1050 m, 15.9.1987, *G. H. Dar* 9356.
Cymbopogon martinii (Roxb.) Wats.	Rajouri, Kheora, 1000 m, 20.9.1987, *G. H. Dar* 9391.
Cymbopogon distans (Nees ex Steud.) Wat	Rajouri, 950 m, 1.12.1987, *G. H. Dar* 9489.
Cynodon dactylon (L.) Pers.	Poonch, Lohren, 2100 m, 9.1.2010, *Akhtar* 1279.
Digitaria ciliaris (Retz.) Koel.	Rajouri, 950 m, 30.8.1988, *G. H. Dar* 9948.
Digtaria setigera Roth ex Roem. & Schult.	Rajouri, Air field, 950 m, 27.9.1988, *G. H. Dar* 9919.
Eleusine indica (L.) Gaertn.	Rajouri, 950 m, 30.8.1987, *G. H. Dar* 9345.
Hemarthria compressa (L. f.) R. Br.	Rajouri, 950 m, 31.8.1987, *G. H. Dar* 9763.
Imperata cylindrica (L.) Raeuschel	Rajouri, Kheora, 1000 m, 20.9.1987, *G. H. Dar* 9394.
Isachne himalaica Hook. f.	Rajouri, Ujhan, 1050 m, 27.9.1988, *G. H. Dar* 9889.
Lolium perenne L.	Poonch, Lohren, 2100 m, 9.1.2010, *Akhtar* 1268.
Oplismenus compositus (L.) P. Beauv.	Rajouri, 950 m, 31.8.1988, *G. H. Dar* 9997.
Pennisetum orientale L. C. Rich.	Rajouri, Chowdhary Nar, 1050 m, 20.8.1987, *G. H. Dar* 9358; Kheora, Rajouri, 20.8.1987, *G. H. Dar* 9359*;* Poonch , Noorichumb, 2200 m, 12.8.1987, *G. H. Dar* 9257.
Phragmites karka (Retz.) Trin. ex Steud.	Rajouri, Ujhan, 1050 m, 27.9.1988, *G. H. Dar* 9989.
Poa pratensis L.	Poonch, Bufliaz, 1800 m, 8.1.2010. *Akhtar* 1269.
Poa bulbosa L.	Poonch, Bufliaz, 1800 m, 8.1.2010. *Akhtar* 1452.
Setaria pumila (Poir.) Roem. & Schult.	Rajouri, 950 m, 30.8.1987, *G. H. Dar* 9947.
Setaria viridis (L.) P. Beauv.	Rajouri, 950 m, 30.8.1987, *G. H. Dar* 9946.
Sorghum halepense (L.) Pers.	Poonch, Lohren, 2100 m, crop field, 9.1.2010, *Akhtar* 1674
Sorghum nitidum (Vahl) Pers.	Poonch, Lohren, 950 m, crop field, 9.1.2010, *Akhtar* 1675
Themeda anathera (Nees ex Steud.) Hack.	Rajouri, Ujhan, 1050 m, 27.9.1988, *G. H. Dar* 9789 a.
Triticum aestivum L.	Cultivated. Rajouri, Ujhan, 1050 m, 27.9.1988, *G. H. Dar* 9789 b
Stipa sibirica (L.) Lam.	Poonch, Lohren forest, 2300 m, 9.1.2010, *Akhtar* 1129.
Potamogetonaceae	
Potamogeton perfoliatus L.	Poonch, Mendhar, 900 m, in water channels along with *Chara* species; 6. 2.1988, *G. H. Dar* 9518.
Typhaceae	
Typha angustata Bory and Chaub.	Poonch, Surankote, 1350 m, marshes and stream banks, 9.1.2010, *Akhtar*1621.

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